IN THE CLAIMS:

1. (Currently Amended) A process for ultrapurifying fumes or gases with total recovery of the resultant pollutants, comprising:

- causing a flow of unpolluted water ~~subjecting a stream of pollutant-containing fumes or gases~~ to a sprinkle wash ~~by unpolluted water~~ within a snow producer and subjecting the water~~, during its passage,~~ to rapid cooling to a temperature sufficient to transform it into snow flakes, ~~which along their path collect the pollutants present in the stream of fumes or gases,~~

- striking a stream of fumes or gas and water drops containing micropollutants coming from a previous washing process with the snow flakes, causing crystallization of said drops on said snow flakes and the collection of said micropollutants by the snow flakes,

- discharging ~~from said snow producer~~ said snow flakes which have reached the base thereof from said snow producer , and

- feeding the resultant polluted water deriving from said snow flakes to a gasifier.

2. (Previously Presented) A process as claimed in claim 1, further comprising feeding an ascending stream of fumes or gases into said snow producer.

3. (Currently Amended) A process for ultrapurifying fumes or gases with total recovery of the resultant pollutants, comprising:

- subjecting a stream of pollutant-containing fumes or gases to a sprinkle wash by unpolluted water within a snow producer and subjecting the water, during its passage, to rapid cooling to a temperature sufficient to transform it into snow flakes, which along their path collect the pollutants present in the stream of fumes or gases,

- discharging from said snow producer said snow flakes which have reached the base thereof, and

- feeding the resultant polluted water deriving from said snow flakes to a gasifier, ~~A process as claimed in claim 1, further comprising~~ subjecting the stream of gases or fumes to the action of the snow flakes within said snow producer along at least one portion of their path in co-current and along at least one portion of their path in counter-current.

4. (Currently Amended) A process for ultrapurifying fumes or gases with total recovery of the resultant pollutants, comprising:

- subjecting a stream of pollutant-containing fumes or gases to a sprinkle wash by unpolluted water within a snow producer and subjecting the water, during its passage, to

rapid cooling to a temperature sufficient to transform it into snow flakes, which along their path collect the pollutants present in the stream of fumes or gases,

- discharging from said snow producer said snow flakes which have reached the base thereof, and

- feeding the resultant polluted water deriving from said snow flakes to a gasifier, ~~A process as claimed in claim 1,~~ further comprising using, for the wash, unpolluted water provided by fuel cells fed with hydrogen produced by said gasifier.

5. (Previously Presented) A process as claimed in claim 1, further comprising cooling the wash water to a temperature not greater than 0°C.

6. (Currently Amended) A process for ultrapurifying fumes or gases with total recovery of the resultant pollutants, comprising:

- subjecting a stream of pollutant-containing fumes or gases to a sprinkle wash by unpolluted water within a snow producer and subjecting the water, during its passage, to rapid cooling to a temperature sufficient to transform it into snow flakes, which along their path collect the pollutants present in the stream of fumes or gases,

- discharging from said snow producer said snow flakes which have reached the base thereof, and

- feeding the resultant polluted water deriving from said snow flakes to a gasifier, ~~A process as claimed in claim 1,~~ further comprising rapidly cooling the wash water by cooling the snow producer.

7. (Previously Presented) A process as claimed in claim 6, further comprising cooling said snow producer with a stream of cold fluid circulating externally along the walls of the snow producer.

8. (Previously Presented) A process as claimed in claim 1, further comprising rapidly cooling said unpolluted water with a stream of cold gas injected into said snow producer.

9. (Previously Presented) A process as claimed in claim 7, further comprising cooling said snow producer with oxygen used as combustion support in the gasifier.

10. (Previously Presented) A process as claimed in claim 8, further comprising rapidly cooling the wash water with a stream of carbon dioxide.

11. (Previously Presented) A process as claimed in claim 8, further comprising rapidly cooling the wash water with a stream of nitrogen.

12. (Currently Amended) A process for ultrapurifying fumes or gases with total recovery of the resultant pollutants, comprising:

- subjecting a stream of pollutant-containing fumes or gases to a sprinkle wash by unpolluted water within a snow producer and subjecting the water, during its passage, to rapid cooling to a temperature sufficient to transform it into snow flakes, which along their path collect the pollutants present in the stream of fumes or gases,
- discharging from said snow producer said snow flakes which have reached the base thereof, and
- feeding the resultant polluted water deriving from said snow flakes to a gasifier, ~~A process as claimed in claim 1,~~ further comprising passing the stream of fumes or gases, already subjected to the action of the snow flakes, through dry activated carbon.

13. (Previously Presented) A process as claimed in claim 12, further comprising drying the activated carbon with heat obtained from a thermal destruction plant.

14. (Previously Presented) A process as claimed in claim 12, further comprising drying the activated carbon with heat generated by the plant which produces the stream of fumes or gases to be purified.

15. (Currently Amended) A process as claimed in claim 12, further comprising feeding to ~~a~~ the gasifier the resultant polluted water obtained by drying the activated carbon.

16. (Previously Presented) A process as claimed in claim 12, further comprising feeding the spent activated carbon to a thermal destruction plant.

17. (Currently Amended) A process for ultrapurifying fumes or gases with total recovery of the resultant pollutants, comprising:

- subjecting a stream of pollutant-containing fumes or gases to a sprinkle wash by unpolluted water within a snow producer and subjecting the water, during its passage, to rapid cooling to a temperature sufficient to transform it into snow flakes, which along their path collect the pollutants present in the stream of fumes or gases,
- discharging from said snow producer said snow flakes which have reached the base thereof, and

- feeding the resultant polluted water deriving from said snow flakes to a gasifier, ~~A process as claimed in claim 1,~~ further comprising subjecting the stream of gases or fumes to washing before subjecting the stream of gases or fumes to the action of the snow flakes after which the resultant polluted water is fed to the gasifier.

18. (Previously Presented) A process as claimed in claim 17, further comprising washing the stream of fumes or gases by striking said stream with a water jet at high speed.

19. (Previously Presented) A process as claimed in claim 18, further comprising washing the stream of fumes or gases with a water jet forming an angle less than 901 to the direction of said stream of fumes or gases.

20. (Previously Presented) A process as claimed in claim 18, further comprising impressing high speed onto the water jet by making it fall from above onto a plate rotating about a vertical axis.

21. (Previously Presented) A process as claimed in claim 17, further comprising washing the stream of fumes or gases with water at a temperature of about 41C.

22. (Previously Presented) A process as claimed in claim 21, further comprising obtaining the wash water at a temperature of about 41C by cooling with cold gas.

23. (Previously Presented) A process as claimed in claim 21, further comprising obtaining the wash water at a temperature of about 41C by cooling with gas from the gasifier.

24. (Previously Presented) A process as claimed in claim 22, further comprising cooling the wash water with carbon dioxide.

25. (Previously Presented) A process as claimed in claim 22, further comprising cooling the wash water with nitrogen.

26. (Previously Presented) A process as claimed in claim 22, further comprising cooling the wash water with oxygen.

27. (Previously Presented) A process as claimed in claim 17, further comprising washing the stream of fumes or gases in a washer having at least one wall grazed by said stream.

28. (Previously Presented) A process as claimed in claim 17, further comprising feeding the polluted discharge water to a purification plant before feeding to the gasifier.

29. Cancelled

30. (Previously Presented) A process as claimed in claim 28, further comprising condensing the steam generated by the purification plant by means of liquid CO_2 produced by the gasifier to obtain water with which the washer is fed.

31. (Currently Amended) A process for ultrapurifying fumes or gases with total recovery of the resultant pollutants, comprising:

- subjecting a stream of pollutant-containing fumes or gases to a sprinkle wash by unpolluted water within a snow producer and subjecting the water, during its passage, to rapid cooling to a temperature sufficient to transform it into snow flakes, which along their path collect the pollutants present in the stream of fumes or gases,
- discharging from said snow producer said snow flakes which have reached the base thereof, and
- feeding the resultant polluted water deriving from said snow flakes to a gasifier, ~~A process as claimed in claim 1,~~ further comprising using the hydrogen produced by the gasifier to feed fuel cells, from which unpolluted water is obtained to feed the snow producer.

32.-57. Cancelled

58. (Currently Amended) A process claim as claimed in claim 1 ~~further comprising a gasifier comprising~~ wherein the gasifier comprises

- a thermic lance disgregator operating in absence of air and at a temperature higher than 1600° C the whole decomposition of the material to be treated into combustible gases based on H_2 and CO, non-combustible gases and inerts,

- a water separator to suddenly cool together all the products thus decomposed and to separate the inert products with water, thus generating steam and reducing the gases temperature at not ~~least~~ less than 1200° C,

- a filter-thermoreactor containing a depurative carbonaceous mass heated at a temperature higher than 1200° C, said filter-thermoreactor being connected to said disgregator and to said separator to remove the residual pollutants from the gases and to

transform them, at least in part, into hydrogen, carbon monoxide acid other wholly utilisable gaseous products, and
- a refrigerator for said gaseous products coming out from said filter-thermoreactor.

59. (Previously Presented) A process as claimed in claim 58 wherein the heat coming from the various cooling phases is used to pre-heat the material to be treated and bring it to the correct content of humidity.

60. (Previously Presented) A process as claimed in claim 58 wherein the material to be treated is compressed before being submitted to the action of the thermic lance.

61. (Previously Presented) A process as claimed in claim 60 wherein the compression of the material to be treated is obtained by forcing the passage of said material through the entry aperture to the decomposition chamber.

62. (Previously Presented) A process as claimed in claim 58 wherein a thermic decomposition of the material to be treated is carried out by an oxyhydrogen flame.

63. (Previously Presented) A process as claimed in claim 62 wherein the material to be treated is passed several times through the oxyhydrogen flame.

64. (Previously Presented) A process as claimed in claim 58 wherein during the thermodecomposition of the material to be treated, the covering of the bottom of the decomposition chamber is protected by previously decomposed material.

65. (Previously Presented) A process as claimed in claim 58 wherein the water used in the cooling process is superficially invested by the thermodecomposed products to be cooled.

66. (Previously Presented) A process as claimed in claim 58 wherein all the inert products are collected at a single zone.

67. (Previously Presented) A process as claimed in claim 58 wherein the heat from the thermic lance is recovered to transform gases from the thermic decomposition and separation phases of the inert products into combustible gases.

68. (Currently Amended) A process as claimed in claim 58 wherein the combustible gases are stabilised and purified by passing them through at least one water ~~fim~~ film.

69. (Previously Presented) A process as claimed in claim 58 wherein the carbon monoxide is converted with steam into hydrogen and carbon monoxide in the presence of catalysts.

70. (Previously Presented) A process as claimed in claim 69 wherein $Fe_2 O_3$ - $Cr_2 O_3$ is used as a catalyst.

71. (Previously Presented) A process as claimed in claim 69 wherein Cu - ZnO - $Al_2 O_3$ is used as a catalyst.

72. (Previously Presented) A process as claimed in claim 69 wherein the carbon dioxide is frozen to obtain dry ice.

73. (Previously Presented) A process as claimed in claim 69 wherein the hydrogen is submitted to a purifying phase.

74. (Previously Presented) A process as claimed in claim 69 wherein the hydrogen is used to power a fuel cell.